

# INDEX, VOLUME 15, 1991

## AUTHOR INDEX

- Abd-el-Malek, M. B. 25  
 Abdrabbo, F. M. 406  
 Ahmadi, G. 516  
 Almohamad, H. A. 216  
 Altman, T. 459  
 Arora, U. 386
- BaFail, A. O. 489  
 Bailey, C. 639  
 Beckermann, C. 596  
 Bennett, D. A. 506  
 Boulos, P. 459  
 Boyd, R. 295  
 Bradley, R. 506  
 Brook, P. A. 182, 191  
 Bujurke, N. M. 319  
 Busnaina, A. A. 425
- Campisi, D. 525  
 Cauli, L. 58, 73  
 Chambers, J. M. 267  
 Chan, C. L. 244, 562  
 Chan, K. S. 624  
 Chandra, A. 244, 562  
 Chen, C. M. 576  
 Chen, H.-T. 144  
 Chlebus, E. 440  
 Chowdhury, S. J. 516  
 Copeland, A. H. 586  
 Corotis, R. B. 367  
 Cross, M. 394, 624, 639  
 Cundiff, W. E. 483
- Das, S. K. 282  
 Dauer, J. P. 329  
 Duffuaa, S. O. 652  
 Duncan, K. 209  
 Durão, D. F. G. 338
- El-Deen Mohamedein, M. S. 82  
 Ellis, J. H. 367  
 Elsworth, D. 256
- Fletcher, D. F. 40, 496  
 Forskitt, M. 182, 191  
 Frydrychowicz, W. 2  
 Fryer, Y. D. 639
- Gakkhar, S. 386  
 Gáspár, C. 606  
 Gelenbe, E. 534  
 Grabacki, J. 170  
 Greben, J. M. 657  
 Greenspan, D. 104  
 Gupta, R. S. 386
- Hanna, S. N. 25  
 Haugland, D. 33  
 Hearn, C. J. 200, 267  
 Huang, H. C. 274  
 Hubele, N. F. 489  
 Huillet, T. 58  
 Hunter, J. R. 200
- Jayaraman, G. 319  
 Jiashen, F. 416  
 Johnson, S. P. 394  
 Jørnsten, K. 33
- Kamel, M. T. 25  
 Kochavi, E. 152  
 Koenders, M. A. 646  
 Kwok, Y.-K. 98
- La Bella, A. 525  
 Lai, C.-H. 639  
 Langerman, M. A. 542  
 Langtangen, H. P. 467  
 Lardner, R. W. 282
- Lei, F. 416  
 Lewis, R. W. 274  
 Li, C. W. 616  
 Lin, J.-Y. 144  
 Lum Wan, J. A. 359
- McComb, A. J. 267  
 MacKinnon, R. J. 542  
 Mahmoud, M. A. 406  
 Malmborg, C. J. 305  
 Marinos-Kouris, D. 475  
 Mocci, F. 374  
 Moon, J. R. 182, 191  
 Moore, III, B. 586  
 Muratori, S. 312
- Naduvanamani, N. B. 319  
 Najjar, F. M. 226  
 Nastasi, A. 525
- Ohnaka, K. 46  
 Oshiumi, H. 46
- Pantelis, G. 136  
 Pentzaropoulos, G. C. 433  
 Pereira, J. C. F. 338  
 Pericleous, K. 624
- Qinglan, L. 450
- Ramos, J. I. 126  
 Rigal, G. 58  
 Rinaldi, S. 312  
 Ringo, C. D. 586  
 Ritchie, A. I. M. 136  
 Rosinger, E. E. 158
- Salimbeni, D. 73  
 Sasiwong, B. 164  
 Schachter, G. 525
- Schneider, M. C. 596  
 Segall, R. S. 586  
 Segev, R. 152  
 Sellmeijer, J. B. 646  
 Sharif, M. A. R. 425  
 Shayan, E. 33  
 Shieh, L. S. 576  
 Shih, L. Y. 632  
 Siming, W. 450  
 Singh, M. C. 2  
 Stafylopatis, A. 534  
 Stamou, A. I. 351  
 Stojanović, M. 381
- Tabucanon, M. T. 164  
 Thomas, B. G. 226  
 Thyagaraja, A. 40, 496  
 Tosi, M. 374  
 Tsai, J. S. H. 576  
 Tsai, W.-Y. 14
- Uri, N. D. 295
- Vagenas, G. K. 475
- Welch, T. N. 274  
 Whalley, R. 90, 550  
 White, L. R. 359  
 Woolsey, R. E. D. 493
- Xiang, J. 256
- Yagiz, Ö. 114  
 Ye, J. 325  
 Yomdin, Y. 152
- Zheng, X. 425  
 Zili, M. 450  
 Zimmerman, J. J. 367

## TITLE INDEX

- A BEM approach to thermal aspects of machining processes and their design sensitivities 562
- A class of cyclic queue with priority batch service 450
- A control method for speeding up response of a heating plant with solar-assisted energy recovery 73
- A control volume procedure for solving the elastic stress-strain equations on an unstructured mesh 639
- A difference method for non-self-adjoint singular perturbation problem of second order 381
- A direct solution of allocation problems 374
- Advection-dispersion simulation by minimization characteristics and alternate direction-explicit methods 616
- A finite difference error arising from the use of a staggered grid 496
- A finite element analysis of fire-resisting cabinets using an adaptive remeshing technique 274
- A graph-theoretic approach to explicit nonlinear pipe network optimization 459
- A heuristic preprocessor supported algorithm for the capacitated plant location problem 114
- A mathematical model for piping 646
- A mathematical optimization model for chemical production at Saudi Arabia Fertilizer Company 652
- A model of flow and nutrient absorption in artificial wetland systems 267
- A modified skew upwind scheme for fluid flow and heat transfer computations 425
- A multiprocess Bayesian model for electric load forecasting 489
- An algorithm for handling corners in the boundary element method: Application to conduction-convection equations 244
- Analysis of ice-induced vibrations on a flexible structure 632
- An analysis of a model of the MPS MX missile system using geometric programming 493
- A nonstandard curve-fitting application in modelling lake depth 329
- An operational view of the M/G/1/PS queueing model with IO overhead as part of service 433
- A one-dimensional, linear model of rigid thermal conductors exhibiting phonon viscosity: A numerical example 82

- A polynomial transform for matching pairs of weighted graphs 216
- Application of Laplace transform to nonlinear transient problems 144
- Application of the trajectory image method to solve convection-diffusion equations 14
- Approximate solution of gravity flow from a uniform channel over triangular bottom for large Froude number 25
- A rate-dependent algebraic stress model for turbulence 516
- A separation condition for the existence of limit cycles in slow-fast systems 312
- A strategy for an efficient simulation of countercurrent flows in the iron blast furnace 506
- Boundary element approach for identification of the external forces in the scalar wave equations 46
- Boundary integral equations in sensitivity analysis 170
- Calculation of isothermal turbulent three-dimensional free multijet flows 338
- Closed form solution for nonlinear dynamic response in shallow shells 416
- Contour integrals for gravity computation of horizontal 2½-D bodies with variable density 98
- Digital modelling, ideal state reconstructor, and control for time-delay sampled-data systems 576
- Discontinuous solutions of nonlinear wave phenomena by similarity approach 2
- Dynamic response of liquid curtains to time-dependent pressure fluctuations 126
- Effects of simplified enthalpy relations on the prediction of heat transfer during solidification of a lead-tin alloy 596
- Elastic properties of plates perforated by cusp-shaped holes 191
- Elastic properties of plates perforated by elliptical holes 182
- Factor release in two-dimensional system models 550
- Factors affecting the demand for softwood lumber in the United States 295
- Finite element modelling of turbulent fluid flow and heat transfer in continuous casting 226
- Finite element simulation of drying of agricultural products with volumetric changes 475
- Global behavior of homogeneous random neural systems 534
- Interruption of a seepage flow from a water source 406
- Large deflection analysis of axisymmetric circular plates with variable thickness by the boundary element method 325
- $\mathcal{L}$ -convergence paradox in numerical methods for PDEs 158
- Low Mach number instability of an explicit numerical scheme 40
- Low-order finite elements for parameter identification in groundwater flow 256
- Macroscopic transport mechanisms as a rate-limiting factor in dump leaching of pyritic ores 136
- Mapping structured grid three-dimensional CFD codes onto parallel architectures 394
- Mathematical modelling of inverse problems for oceans 586
- Modelling petroleum fields with movable platforms 33
- Model structure, complexity, and algorithmic transparency in APL 483
- Nonlinear filters approximations by cumulant function expansion: The polynomial case 58
- Numerical simulation of flows encountered during mold-filling 624
- Numerical solution of field problems by nonconforming Taylor discretization 152
- On obtaining the steady-state solutions of the linearized three-dimensional hydrodynamic equations 200
- On the computation of flows driven by density gradient: Residual currents in the Arabian Gulf 282
- On the physical relevance of the discrete Fourier transform 657
- On the prediction of flow and mixing in settling tanks using a curvature-modified  $k$ - $\epsilon$  model 351
- Particle modelling of combustion 104
- Production planning and scheduling for an iron and steel production system 164
- Reconstruction of the distribution of conductivity from boundary data 606
- Removal model suitable for air pollutants emitted from an elevated source 386
- Scaling considerations for modelling the in situ vitrification process 542
- Sensitivity analysis of an enhanced oil recovery process 467
- State-space representations for two-dimensional control system models 90
- Stochastic programs for identifying critical structural collapse mechanisms 367
- The dynamic behavior of multiregional multisectoral models: A biregional application to the Italian economy 525
- The numerical solution of inverse problems of Fourier convolution type 359
- Theoretical modelling of poro-elastic slider bearings lubricated by couple stress fluid with special reference to synovial joints 319
- The pseudo-spectral method applied to a problem in countercurrent, gas-solid reactors 209
- Tightened analytical bounds on the impact of dispatching rules in automated guided vehicle systems 305
- Validation of models for a telephone network employing routing over transit paths 440

## KEYWORDS INDEX

- Activation energy 475
- Adaptive method 126
- Adaptive methods 126
- Adaptivity 274
- Advection 386
- Advection-diffusion equation 267
- Advection-dispersion 616
- Advection-dominated flow 425
- Algebraic stress 516
- Algorithmic transparency 483
- Anisotropic 506
- APL 483
- Approximation 58
- Arabian Gulf 282
- Automated guided vehicle systems 305
- Auxiliary junctions 374
- Axisymmetric bending 325
- Balanced growth 525
- Baroclinic flow 282
- Batch service 450
- Behavior 534
- BEM 562
- Bifurcations 312
- Binary alloy 596
- Bio-leaching 136
- Biological filters 267
- Blast furnace 506
- Block-implicit methods 126
- Block-pulse function 576
- Body force 496
- Bottom friction 200
- Boundary element 406
- Boundary element method 46, 244, 325
- Boundary integral equation 170
- Boundary value problem 646
- Capacitated plant location 114
- Catastrophes 312
- CFD 394
- Characteristics 616
- Chemical process 652
- Combustion 104
- Compressible flow 40
- Computer performance 433
- Computer simulation methods 226
- Conduction-convection 244
- Conformal mapping 25
- Continuous casting 226
- Contour integral 98
- Control 73, 90
- Controllability 550

- Control volume 639
- Convection-diffusion 136
- Convection-diffusion equations 14
- Convergence 226
- Convolution 200
- Corner algorithm 244
- Cost optimization 493
- Countercurrent 506
- Couple stress fluid 319
- Courant number 40
- Cumulant function expansion 58
- Current density 542
- Curvature effects 351
- Curve-fitting 329
- Cusp-shaped pores 191
  
- 3-D mold filling 624
- Damping effects 632
- Demand for lumber 295
- Density-driven flow 282
- Depth-averaged 200
- Design sensitivities 244
- Design sensitivity analysis 562
- Diffusion 386
- Diffusion coefficient 475
- Digital modelling 576
- Discrete Fourier transforms 657
- Dispatching 305
- Distributed parameter systems 46
- Ditch 406
- Domain decomposition 209
- Drain 406
- Drying 475
- Dynamical systems 586
- Dynamic pattern of flow 406
  
- Economic modelling 295
- Elastic half space 416
- Elastic stress analysis 639
- Electrical impedance tomography 606
- Elliptical pores 182
- Enthalpy function 596
- Equivalent load 325
- Ergun 506
- Erosion 646
- Error estimation 274
- Explicit scheme 40
- Exponential splines 381
- Extended thermodynamics 82
  
- Finite deflection 325
- Finite difference 616
- Finite difference approximations 425
- Finite difference method 126, 144
- Finite differences 496
- Finite element 182, 191, 226, 274
- Finite elements 256, 475
- Finite volume method 338
- Fire-resisting cabinets 274
- Flame 104
- Flexible structure 632
- Flow-through curves 351
- Fluid flow 226
- Forced dynamical systems 126
- Forward-in-time solution 525
- Fourier convolution 359
- Fourier series in nondimensional coordinates 416
- Fractional step method 386
- Free surface flows 624
  
- Generalized search origin 114
- Graph matching 216
- Graph theory 216, 459, 483
  
- Gravity computation 98
- Ground deposition 386
- Groundwater 256
  
- Harrison-Stevens model 489
- Heat propagation 82
- Heat transfer 73
- Heterogeneous media 467
- Heuristic preprocessor 114
- Hilbert's transforms 25
- Homogeneous 534
- Horizontal bodies 98
- Hydrodynamic 200
- Hypergeometric functions 646
  
- Ice-induced vibration 632
- Ideal state reconstructor 576
- Identification 46, 58
- Illposed problem 606
- Incompressible viscous flow 425
- Input data importance 467
- In situ 542
- Integer programming 652
- Integral equation 46
- Interpolation 657
- Interruption 406
- Inverse problem 606
- Inverse problems 359, 586
- Inverse solution 256
- Iron and steel plant 164
  
- Joule heat 542
  
- K- $\epsilon$  model 226, 351
  
- Lake 406
- Laplace-Stieltjes transform 450
- Laplace transform 144
- Least squares approximation 46
- Limit cycles 312
- Linear elasticity operator 170
- Linear program 329
- Liquid curtains 126
  
- Machining 562
- Mach number 40
- Materials-handling 305
- Mathematical model 136, 374, 440
- Mathematical models 493, 632
- Mathematical programming 164
- Matrices 82
- Mechanical properties 182, 191
- Mathematical programming 164
- Missile systems 493
- Mixed boundary value problem 244
- Mixed integer programming 33
- Model 542
- Modelling 73, 319
- Models 90
- Molecular model 104
- Multidimensional systems 550
- Multiphase flow 496
- Multiregional input-output modelling 525
  
- Navier-Stokes equation 425
- Neural networks 534
- Nonconforming expansions 152
- Nonconservative boundary conditions 170
- Nonlinear and explicit optimization 459
- Nonlinear filtering 58
- Nonlinear heat conduction 152
- Nonlinear optimization 367
- Nonlinear systems 312
  
- Nonlinear transient problems 144
- Nonlinear waves 2
- Numerical diffusion 40, 425
- Numerical dispersion 425
- Numerical instability 40
- Numerical methods 82, 152, 158
- Nutrient absorption 267
  
- Observability 550
- Ocean modelling 586
- Off-gas 542
- Oil field development 33
- Oil recovery 467
- Optimization 33, 216, 652
- Optimum location 374
  
- Paradox of Lax stability 158
- Parallel algorithms 394
- Parallel architectures 394
- Parametric analysis 493
- Partial differential equations 82, 152
- Path following 209
- Perturbation method 416
- Perturbation technique 25
- Petrochemical industry 652
- Petroleum production 33
- Phase change 274
- Phonon viscosity 82
- Phreatic surface 406
- Pipe networks 459
- Piping 646
- Plates with variable thickness 325
- Poisson's ratio 182, 191
- Polynomial transformations 216
- Porous media 506
- Porous medium and enhanced oil recovery 14
- Potential 542
- Pressure coefficient 25
- Priority queue 450
- Production planning 164
- Production scheduling 164
- Prototype 542
- Pseudo-spectral 209
- Pyrite oxidation 136
  
- Queuing models 433
  
- Random networks 534
- Rate-dependent 516
- Reconstruction from boundary data 606
- Relative stability 525
- Remeshing 274
- Removal 386
- Residual currents 282
- Revisiting time 450
- Reynolds stress 516
- Riemann problem 2
- Rigid thermal conductors 82
- Round-off error propagation 158
  
- Saturation 433
- Scalar equation method 624
- Scaling 542
- Seasonal models 489
- Sedimentation tanks 351
- Seepage 406, 646
- Sensitivity analysis 467
- Sensitivity operator 170
- Set theory 483
- Shock waves 2
- Short-term 489
- Shrinkage 475
- Similarity 542

- Similarity solutions 2
- Simulation 58, 506
- Singularly perturbed boundary value problem 381
- Singular perturbation 312
- Softwood lumber market 295
- Solar energy recovery 73
- Solidification 596
- Spline function 325
- Split operator scheme 616
- Staggered grid 496
- State-space 90
- State space model 550
- Steady-state 200, 433
- Steel 226
- Stochastic optimization 367
- Stress concentration factor 182, 191
- Structural modelling 483
- Structural stability 295
- Structure-ice interaction 632
- Structural analysis 367
- Superheat 226
- Synovial joints 319
- System complexity 483
- Taylor series 152
- Telephone network 440
- Temperature 542
- Time-delay system 576
- Traffic routing 440
- Trajectory image method 14
- Transfer function model 550
- Transit path 440
- Tree networks 374
- Turbulence 226
- Turbulence model 516
- Turbulent free multijet flows 338
- Two-dimensional 90
- Uniform convergence 381
- Unstructured mesh 639
- Validation 440
- van Leer scheme 624
- Variable wind velocity 386
- Velocity field 406
- Vitrification 542
- Voigt viscoelastic model 416
- Volume averaging 596
- Wall laws 226
- Water resources 329
- Wave equation 46
- Wetlands 267
- Working time 450
- Young's modulus 182, 191

